

SUBSTITUTE SHEET (RULE 26)

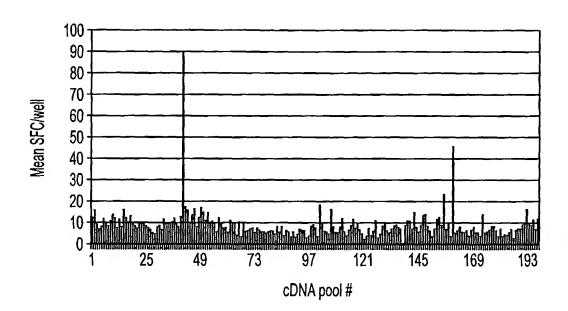


FIG. 2

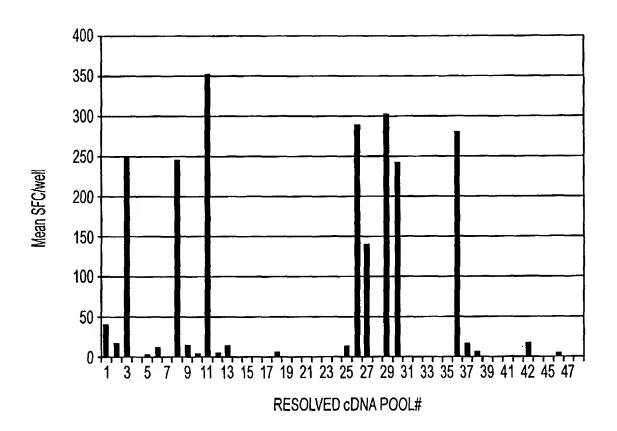


FIG. 3

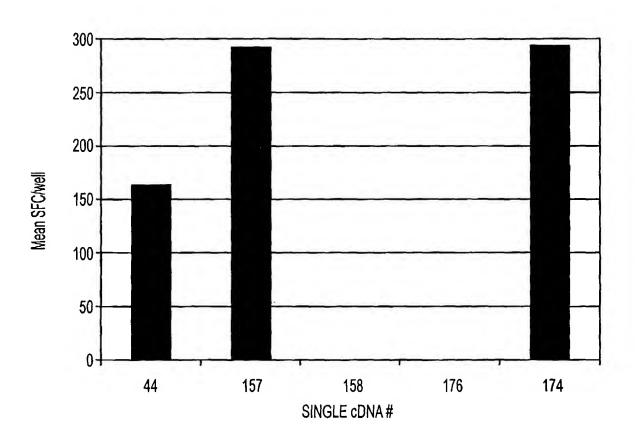


FIG. 4

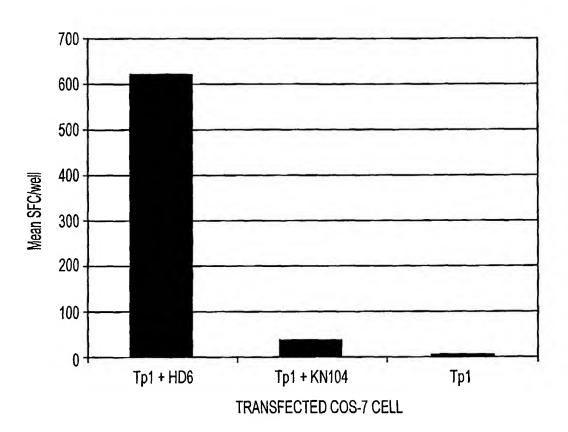


FIG. 5

PCT/US2004/022605

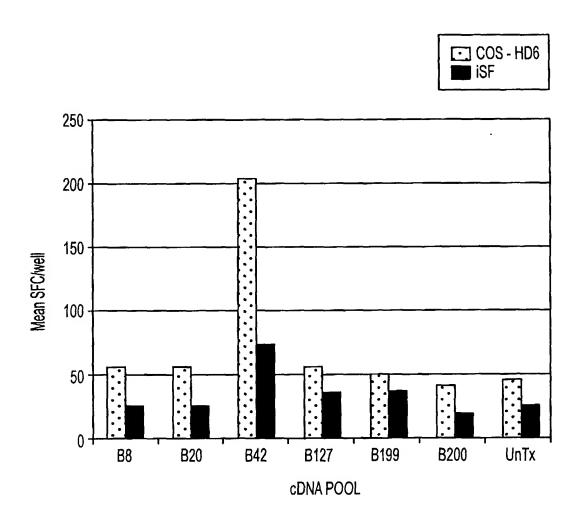
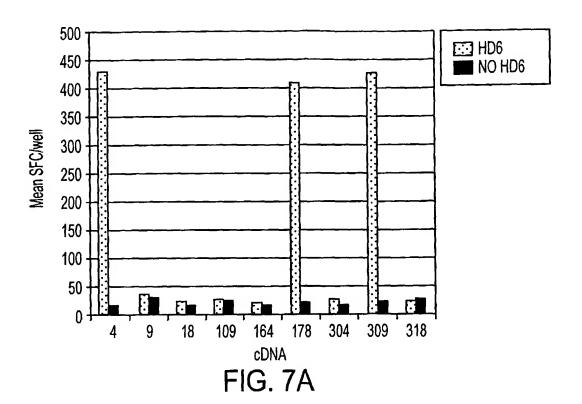
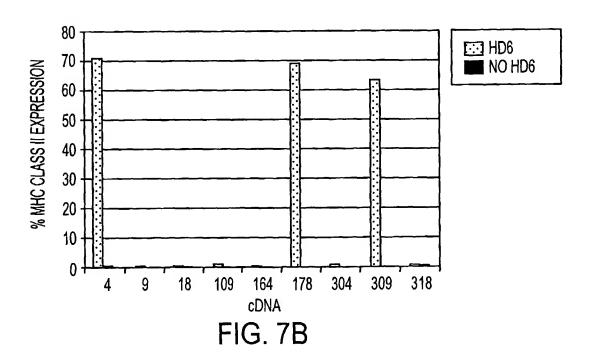


FIG. 6





SUBSTITUTE SHEET (RULE 26)

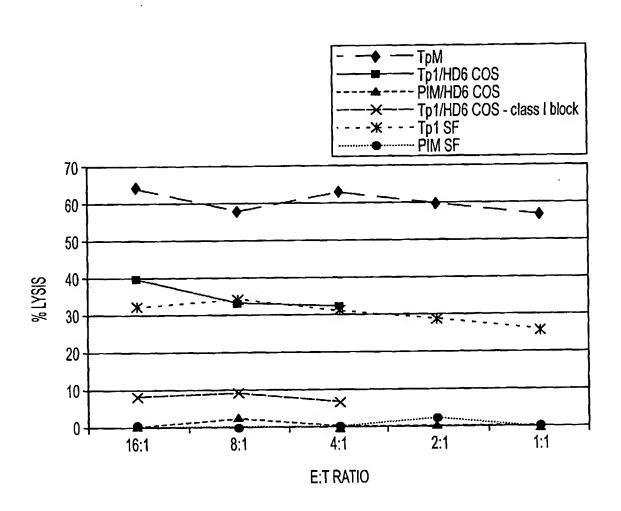


FIG. 8

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	10	20		30	40	50	60	70
80 Tpl ORF	MRVKKVLLYT	LPVVGILLAG	SLIIFNFVRK	RPEKEEELKP	PSALEDELKK	REEESRKRME	EMOKEILEKK	LREGKKALEE LREGKKALEE
Tpl Dell	MRVKKVLLYT	LPVVGILLAG	SLIIFNFVRK	RPEKEEELKP	PSALEDELKK PSALEDELKK	REEESRKRME REEESRKRME	EMÖKEITEKK EMÖKEITEKK	LREGKKALEE
Tpl Del2	MRVKKVLLYT	LPVVGILLAG LPVVGILLAG	SLIIFNFVRK SLIIFNFVRK	RPEKEEELKP RPEKEEELKP	PSALEDELKK	REEESRKRME	EMOKEILEKK	LREGKKALEE
Tpl Del3 Tpl Del4	MRVKKVLLYT MRVKKVLLYT	LPVVGILLAG	SLIIFNFVRK	RPEKEEELKP	PSALEDELKK	REEESRKRME	EWÖKEITEKK	LREGKKALEE
Tpl Dela	MRVKKVLLYT	LPVVGILLAG	SLIIFNFVRK	RPEKEEELKP	PSALEDELKK	REEESRKRME	EMOKEILEKK	LREGKKALEE
Tpl Del6	MRVKKVLLYT	LPVVGILLAG	SLIIFNFVRK	RPEKEEE				
ipi bei	90	100	110	120	130	140	150	160
Tp1 ORF	LEKREKEVVD	BFAKHLKKPE	ERLPKIILTL	DSGFPTVDPI	TYTSGVYMVA	VSKTTFTSDS	DLVDFTHTLL	GIKFLVTGVQ
Tpl Dell	LEKREKEVVD	EFAKHLKKPE	ERLPKIILTL	DSGFPTVDPI	TYTSGVYMVA	VSKTTFTSDS	DLVDFTHTLL	GIKFLVTGVQ
Tpl Del2	LEKREKEVVD	EFAKHLKKPE	ERLPKIILTL	DSGFPTVDPI	TYTSGVYMVA	VSKTTFTSDS	DLVDFTHTLL	GIKFLVTGVQ
Tpl Del3	LEKREKEVVD	EFAKHLKKPE	ERLPKII	DSGFPTVDPI	TYTSGVYMVA	VSKTTFTSDS	DLVDFTHTLL	GIKFLVTGVQ
Tpl Del4	LEKREKEVVD	EFAKHLKKPE	ERLPKII			• • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • •
Tpl Del5	LEKREKEVVD	EFAKHLKKPE	BRL		• • • • • • • • •	• • • • • • • • • •	• • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •
Tpl Del6							220	240
	170	180	190	200	210	220	230 EEMLEMATKF	NRLPKGVEIP
Tp1 ORF	FGGKTYTIKP	IEATMATSIA	FAADPGFCYF	LLIPGPDSKP	IFFKNDGDKF	LRCVGYPKVK LRCVGYPKVK	EEMLEMATKF	NRLPKGVEIP
Tpl Dell	FGGKTYTIKP	IEATMATSIA	FAADPGFCYF	LLIPGPDSKP LLIPGPDSKP	IFFKNDGDKF IFFKNDGDKF	LRCVGYPKVK	EEMLEMATKF	NRLPKGVEIP
Tpl Del2	FGGKTYTIKP	IEATMATSIA	FAADPGFCYF			LACYGIPAVA	EEMBERAIR	MOPROVETE
Tpl Del3		• • • • • • • • • • • •						
Tpl Del4 Tpl Del5				• • • • • • • • • • • • • • • • • • • •				
Tpl Del6								
ipi bero	250	260	270	280	290	300	310	320
Tol ORF	APPGVKPEAP	TPTPTTITPS	VPPTIPTPIT	PSAPPTTPPT	GLNFNLTVQN	KFMIGSQEVK	LNITHEYEGV	YEAHKYFIER
Tpl Dell	APPGVKPEAP	TPTPTTITPS	VPPTIPTPIT	PSAPPTTPPT	GLNFNLTVQN	KFMIGSQEVK	LNITHEYEGV	YEAHKYFIER
Tpl Del2	A							
Tpl Del3	• • • • • • • • • •							• • • • • • • • • • • • • • • • • • • •
Tp1 Del4		• • • • • • • • • •	• • • • • • • • • •		• • • • • • • • • •		• • • • • • • • • • •	• • • • • • • • • •
Tpl Del5	• • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •		• • • • • • • • •	• • • • • • • • • • • • • • • • • • • •
Tpl Del6				260	370	380	390	400
<b>6</b> 5-1 00₽	330	340	350 NQTVDTIVVY	360 FHRVTMGEPV	GIPLIVLIFY	KNOSRKYLNK	GNGNWEESKA	LLFREELDYL
Tpl ORF Tpl Dell	GSFTPTSFSI GSFTPTSFSI	GDLPQTGLPV GDLPOTGLPV	NOTVDTIVVY	FHRVTMGEPV	GIPLIVLIFY	KNOSRKYLNK	GNGNWEESKA	LLFREELDYL
Tpl Dell	0371713731	GDBFQIGBFV	MQIVDIIIVI	1111(111001)				
Tpl Del3								
Tpl Del4				,	,,,			
Tpl Del5								
Tpl Del6								
•	410	420	430	440	450	460	470	480
Tp1 ORF	DSIFNDFVTV	NLSRRSDYYR	NGTGTSEIEQ	TLDMNVYVEP	DTPCAGWTTY	IHKLEEGGEG	GIEKPFQIRQ	LWFSKQKFDI
Tpl Dell	DSIFNDFVTV	NLSRRSDYYR	NGTGTSEIEQ	TLDMNVYVEP	DTPCAGWTTY	IHKLEEGGEG	GIEKPFQIRQ	LWFSKQKFDI
Tp1 Del2					• • • • • • • • • •	• • • • • • • • • • • •	• • • • • • • • • •	• • • • • • • • • • •
Tpl Del3	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • •	• • • • • • • • •	• • • • • • • • •	• • • • • • • • •	• • • • • • • • • •		• • • • • • • • • • • • • • • • • • • •
Tpl Del4	• • • • • • • • • • • • • • • • • • • •	• • • • • • • • • •		• • • • • • • • •	• • • • • • • • • • •	• • • • • • • • • •	• • • • • • • • • • •	• • • • • • • • • • • • • • • • • • • •
Tpl Del5	• • • • • • • • • • • • • • • • • • • •		• • • • • • • • • •			• • • • • • • • • •		• • • • • • • • • • • • • • • • • • • •
Tpl Del6	400				530	540	550	• • • • • • • • • •
Tp1 ORF	490 FPMGKVSIVN	500 VYGKNDEPLS	510 YAPSIFSVIR	520 EDGIQIFYVR	AYSQYLLDSS	VNPQNLPQKL	NTL*	
Tpl Dell	FPMGKVSIVN	VYGKNDEPLS	YAPSIFSVIR	EDGIQIFYVR	AYSQYLLDSS	VNPQNLPQKL	NTL*	
Tpl Dell	PPIGRVSIVI	AIGMINETES		PDGtGtt.tak	HIJQIDDDD	AULÖURIĞICR		
Tpl Del3								
Tpl Del4								
Tpl Del5								
Tpl Del6								

FIG. 9

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	200	210	220	230	240
Tp1.1	mPGPDSKP	IFFKNDGDKF	LRCVGYPKVK	EEMLEMATKF	NRLPKGVEIP
Tp1.2 Tp1.3					
Tp1.4	mPGPDSKP	IFFKNDGDKF	LRCVGYPKVK	EEMLEMATKF	NRLPKGVEIP
Tp1.5					
Tp1.6	mPGPDSKP	IFFKNDGDKF	LRCVGYPKVK	EEMLEMATKF	NRLPKGVEIP
	250	260	270	280	290
Tp1.1	APPGVKPEAP		_,	_5.	
Tp1.2	<b>m</b> P	TPTTITPS VI	PPTIPTPIT PS	SAPPTTPPT GI	LNFNLTVQN
Tp1.3	A DDOMINADA D	mnmmrmn ette		3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	ATTAIT MILATER
Tp1.4	APPGVKPEAP mP		PTIPTPITPS PTIPTPITPS	APPTTPPTGL	
_	APPGVKPEAP		PTIPTPITPS		
	300	310	320	330	340
Tp1.1	117017 000 0 T. T.				
_	KFMIGSQEVK			Calminaga	ant nomat hit
Tp1.3	KFMIGSQEVK		YEAHKYFIER YEAHKYFIER	GSFTPTSFSI	GDLPQTGLPV GDLPQTGLPV
	KFMIGSQEVK			GSFTPTSFSI	GDLPQTGLPV
Tp1.6	KFMIGSQEVK	LNITHEYEGV	YEAHKYFIER		GDLPQTGLPV
	350	360	369		
Tp1.1 Tp1.2					
	NOTVDTIVVY	FHRVTMGEPV	GIPLIVLIF		
Tp1.4					
Tp1.5	NQTVDTIVVY				
Tp1.6	NQTVDTIVVY	FHRVTMGEPV	GIPLIVLIF		

FIG. 10

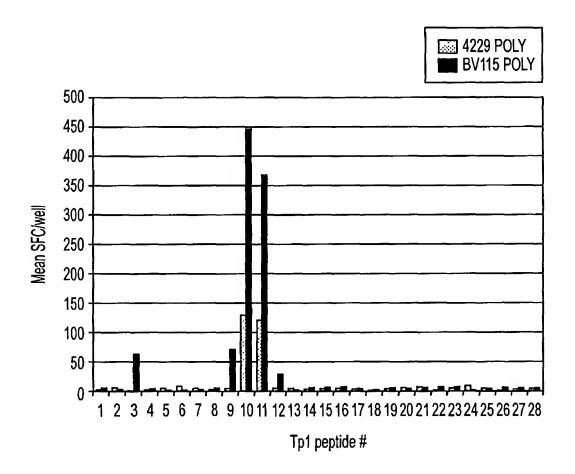


FIG. 11

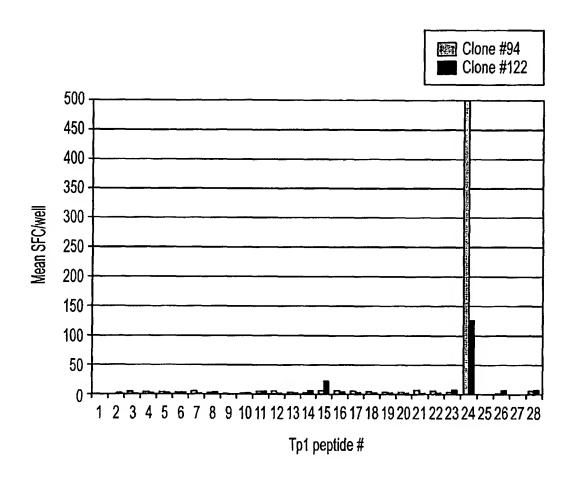


FIG. 12

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	10 20	30	40	50	60
Tp1Muguga	MRVKKVLLYTLPVVGI	LLAGSLIIFN	FVRKRPEKEEE	ELKPPSALEDE	ELKKREEESRKRME
Tp1Marikebuni	MRVKKVLLYTLPVVGI 10 70	LLAGSLIIFN 20 80	FVRKRPEKEEE 30 90	ELKPPSALEDE 40 100	ELKKREEESRKRME 50 60 110 120
Tp1Muguga	EMQKEILEKKLREGKK				
TplMarikebuni	70	80	9.0	100	110 120
Tp1Muguga	130 TYTSGVYMVAVSKTTF	140 TSDSDLVDFT	150 HTLLGIKFLVT	160 GVQFGGKTYT	170 180 TIKPIEATMATSIA
Tp1Marikebuni	130	140	HTLLGIKFLVA 150	160	170 180
Tp1Muguga	190 FAADPGFCYFLLIPGP	200 DSKPIFFKND	210 GDKFLRCVGYE	220 KVKEEMLEMA	230 240 ATKFNRLPKGVEIP
Tp1Marikebuni	190	200	210	220	230 240
Tp1Muguga	250 APPGVKPEAPTPTPTT	260 ITPSVPPTIP	270 TPITPSAPPTT	280 PPTGLNFNLT	290 TVQNKFMIGSQEVK
Tp1Marikebuni	APPGVKPEAPTPTTT 250 310	ITPSVPPTIP 260 320	TPITPSAPPTT 270 330	PPTGLNFNLT 280 340	TVONKFMVGSQEVK 290 300 350 360
Tp1Muguga	LNITHEYEGVYEAHKY	FIERGSFTPT	SFSIGDLPQTG	LPVNQTVDT	VVYFHRVTMGEPV
Tp1Marikebuni	LNITHEYDGVYEAHKY 310 370	FIEKGRFTPT 320 380	:::::: SFSIGADPQTG 330 390	LPVNQTVDTI 340 400	TVVYFHRVTMGEPV 350 360 410 420
Tp1Muguga	GIPLIVLĬŕŸKNOSRK	YĽNKGNGNWE	eškällfreei	DYLDSIFNDE	PVTVNLSRRSDÝÝŘ
Tp1Marikebuni	GIPLIVLVFYKNQSTK 370 430	YLNKGNGNWE 380 440	ESKALLFREEL 390 450	DFLDSMFNGY 400 460	VTVNLSRRSDYYR 410 420 470 480
Tp1Muguga	NGTGTSEIEQTLDMNV				
Tp1Marikebuni	NGTGTSEIEKTLDMNV 430 490	::::::::::::::::::::::::::::::::::::::	:::::::: WTTYIHKLEEG 450 510	GEGGIEKPFO 460 520	DIRQLWFSKQKFDI 470 480 530 540
Tp1Muguga	FPMGKVSIVNVYGKND	EPLSYAPSIF	SVĪŘEDGIQIF	YVRAYSQYLI	DSSVNPQNLPQKL
TplMarikebuni	FPMGKVSIVNVYGKND 490	EPLSYAPSIF	SVIREDGIQIF 510	YVRAYSQYLI 520	DSSVNPQNLPQKL 530 540
Tp1Muguga	NTL				
Tp1Marikebuni	TAE				

FIG. 13

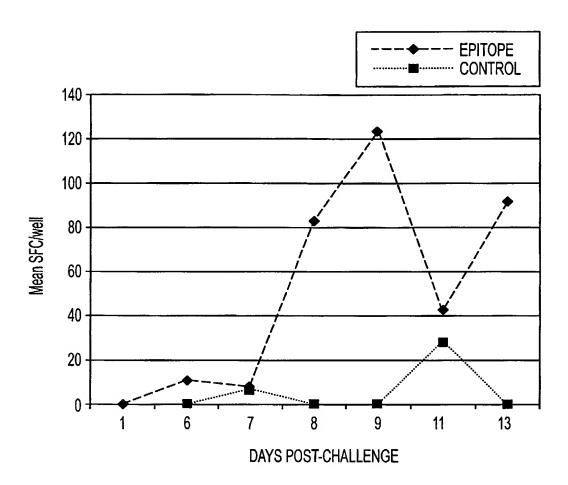


FIG. 14

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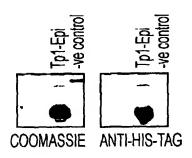
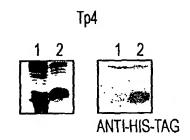
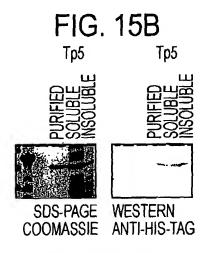


FIG. 15A



1: CRUDE; 2: PURIFIED



FULL-LENGTH Tp5

FIG. 15C

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FIG. 16Aa

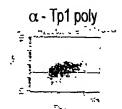


FIG. 16Ab

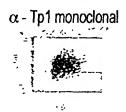


FIG. 16Ac

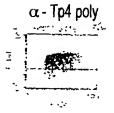


FIG. 16Ad

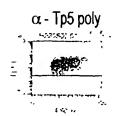


FIG. 16Ae

ANTIBODY	% OF T. PARVA INFECTED CELLS STAINED
Anti-Tp1 polyclonal Ab	78
Anti-Tp1 monoclonal Ab	85.96
Anti-Tp4 polyclonal Ab	92.52
Anti-Tp5 polyclonal Ab	96.04
Control	0.32

FIG. 16B

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MATS IAFAADPGFCYFLL I PGPDSKP I FFKNDGDKFLRCVGY PKVKEEM<u>L</u>EMATKFNRLPKGVE I PAPPGVK MATSIAFAADPG<u>F</u>CYFLLIP<u>GPDS</u>KPIF<u>F</u>KNDGDKFLRCVGYPKVKEE<u>ML</u>EMATKFNRLPKGVEIPAPPGVK MATSIAFAADPG<u>E</u>CYFILIP<u>GPDS</u>KPIF<u>F</u>KNDGDKFIRCVGYPKVKEE<u>ML</u>EMATKFNRLPKGVEIPAPPGVK MATS IAFAADPG<u>F</u>CYFLLIPGPDSKPIF<u>F</u>KNDGDKFLRCVGYPKVKEE<u>ML</u>EMATKFNRLPKGVEIPAPPGVK **4ATSIAFAADPG<u>F</u>CYFLLIPGPDSKPIFFKNDGDKFLRCVGYPKVKEE<u>ML</u>EMATKFNRLPKGVEIPAPPGVK** MATSIAFAADPG<u>F</u>CYFLLIPGP<u>DS</u>KPIF<u>LK</u>NDGDKFLRCVGYPKVKEE<u>ML</u>EMATKFNRLPKGVEIPAPPGVK MATSIAFAADPGECYFLLIPGPDSKPIFEKNDGDKFLRCVGYPKVKEB<u>II</u>EMATKFNRLPKGVEIPAPPGVK MATSIAFAADPGICYFLLIP<u>AP--</u>KPIF<u>F</u>KNDGDKFLRCVGYPKVKEE<u>II</u>EMATKFNRLPKGVEIPAPPGVK MATSIAFAADPG<u>F</u>CYFLLIPGPDSKPIFFKNDGDKFLRCVGYPKVKEEILEMATKFNRLPKGVEIPAPPGVK MATS I AFAAD PGFCYFLL I PGPDSKP I FFKNDGDKFLRCVGY PKVKEE I LEMATKFNRL PKGVE I PAPPGVK MATSIAFAADPGECYFLLIPGPDSKPIFFKNDGDKFLRCVGYPKVKEEIIEMATKFNRLPKGVEIPAPPGVK MATSIAFAADPGFCYFLLIPGPDSKPIFFKNDGDKFLRCVGYPKVKEEIIEMATKFNRLPKGVEIPAPPGVK PEAPTPTTTTTPSVPPTIPTPTTPSAPPTTPPTGLNFNLTVQNKFMIGSQEVKLNITHEYEGVYEAHKYFI PEAPTPTTTTTPSVPPTTPTTPSAPPTTPPTGLNFNLTVQNKFMIGSQEVNLNITHEYEGVYEAHKYFI PEAPTPTTTTTPSVPPTTPTTTPSAPPTTPPTGLNFNLTVQNKFMIGSQEVNLNITHEYEGVYEAHKYFI peaptpttttpsvpptiptpttpsappttpptginfnltvonkfmigsoevkinitheyegvyeahkyfi PEAPTPTPTPITPSAPPTT-----PPTTPPKGLNFNLTLQNKFMIGSQEVKLSITHEYDGVXEAHKYFI PEAPTPTTTTTPSVPPTIPTTPSAPPTTPPTGLNFNLTVQNKFMVGSQEVKLNITHEYDGVYEAHKYFI PEAPTPTTTTTPSVPPTTPTTTPSAPPTTPPTGLNFNLTVQNKFM<u>I</u>GSPEV<u>KLN</u>ITHEY<u>E</u>GVYEAHKYFI PEAPTPTTTTTPSVPPTIPTTTPSAPPTTPPTGLNFNLTVQNKFMVGSQEVKLNIPHEYDGVYEAHKYFI PEAPTPTTITTPSVPPTIPTTPSAPPTTPPTGLNFNLTVQNKFMIGSQEVKLNITHEYEGVYEAHKYFI PEAPTPTTTTTPSVPPT1PTPTTPSAPPTTPPTGLNFNLTVQNKFMVGSQEVKLNITHEYDGVYEAHKYF1 PEAPTPTTTTTPSVPPTIPTTITPSAPPTTPPTGLNFNLTVQNKFMVGSQEVKLNITHEYEGVYEAHKYFI D409TpMariakani D409TpMariakani Buffalo7344cl Buffalo7344cl KilifiBR305 XilifiBR305 VyairoIL02 NyairoIL17 NyairoIL02 NyairoIL17 Kakuzi 521 Kakuzi 521 KilifiKL1 Kakuzi521 (ilifiKL) KilifKL2 KilifKL2 Kakuz 521 Sambia2

FIG. 1

PEAPTPTPTTITPS<u>VPPTIPTPITPSA</u>PPTTPPTGLNFNLT<u>V</u>QNKFMVGSQEV<u>KLN</u>ITHEY<u>D</u>GVYEAHKYFI

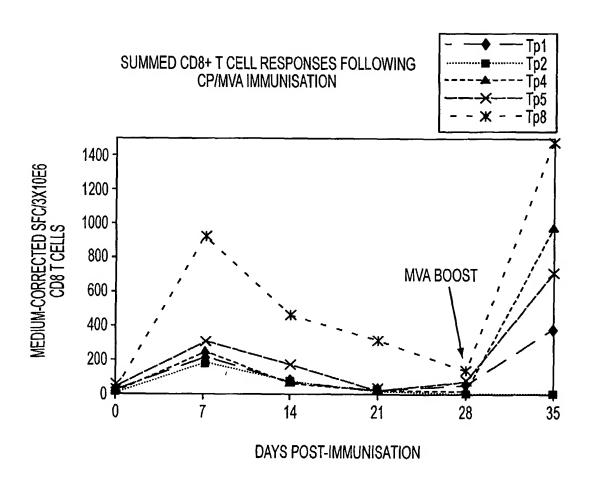


FIG. 18

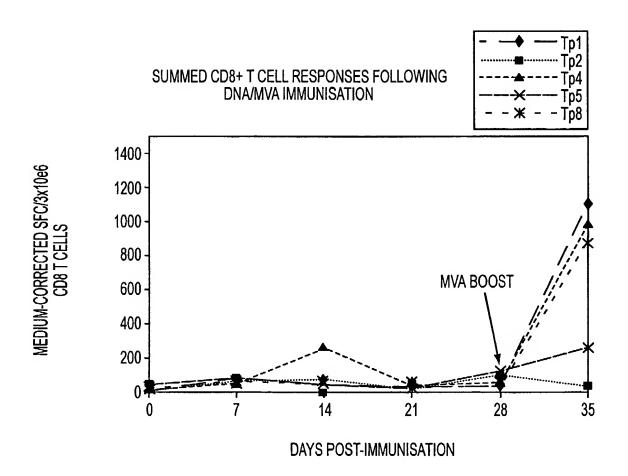


FIG. 19

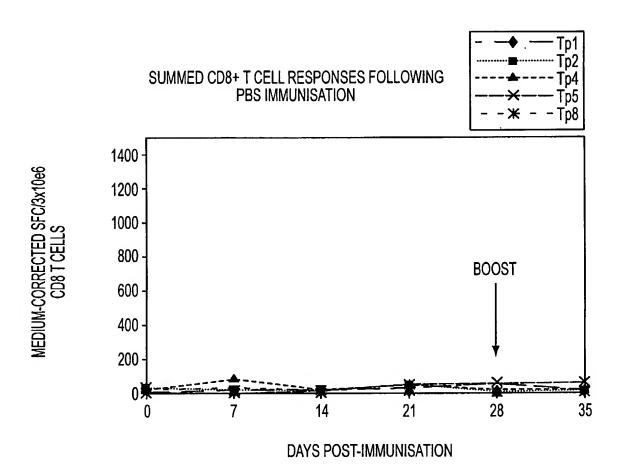


FIG. 20